# Ayden Chubbic

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I'm a graduating computer science major at the University of California, Santa Cruz. My experience working with low-level systems in conjunction with my background in design allows me to uniquely contribute to any team I'm on!

## RELEVANT EXPERIENCE

**UX designer (C++, JavaScript, Swift)**
Social Emotional Technologies lab / Santa Cruz, CA / Jan 2020 - Present

My team and I collaborate to study and design new means of facilitating playful interactions between strangers using technology. My primary responsibilities are to:

- Design and build user-facing iOS applications/handheld hardware, primarily in React.js and C++ respectively
- Conduct user interviews: What are problems users experience with current technology? What features does an ideal platform provide users with? How did you respond to our prototype? What aspects of our design made this platform inaccessible?
- Build applications with with a lay audience in mind, employing design-oriented thinking to consider aspects of the application such as 1) lowering the learning curve necessary to use our platform and 2) producing a platform complex enough that users are incentivized to invest time in learning its ins and outs
- Oversee logistics: organize test groups, writing technical documentation and grant proposals.

**Undergraduate Research Assistant (C++, Golang)**
Research Center on Autonomous Systems / Santa Cruz, CA / Sep 2019-Dec 2019

- Contributed to a TensorFlow library which used machine learning algorithms to allow "flocks" of drones to relay changes in wind, pressure, etc. to nearby drones, allowing them to adjust their flight path accordingly.
- The improvements produced 6% improved power consumption and allowed receiving drones to reach their destination more reliably without being blown off course.
- My contributions include scripts designed to throttle the remote flight controller's multithreading to improve response times in lead drones. I used C++ and Golang for this project.

## PLATFORMS

Linux
iOS
Apache
Dreamweaver
Android
MIPS

## DESIGN METHODS

Agile development
SCRUMs
Unit Testing
User Research
Prototyping
Usability testing

## COMMUNITY INVOLVEMENT

Discovery Preschool
(2015-present)

Second Harvest
(2016-present)

Kiwanis
(2013-2019)

HourOfCode
(2014-2017)

## CONTACT

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## TECHNICAL SKILLS

C++, Python, React, Golang, Flask, Firebase, SQL, HTML, JavaScript, Swift, Matlab, Microsoft Office Suite

## INTERPERSONAL SKILLS

Communication, Collaboration, Prototyping, Interviews, Surveys, Usability Testing, Storyboarding, Contextual Inquiry

## EDUCATION

Computer Science (BSc), UCSC

*Relevant Coursework:* Network Design, Distributed Systems, Adv. Algorithms

Tutoring: Distributed Systems, Discrete Mathematics

## PROJECTS OF INTEREST

### *Chore app: Javascript • Databases • HTML*

Designed and contributed to a website which allows members of a household to designate and keep tabs on chores. My contributions revolved around using Node.js to talk to Firebase and maintain the database. The application is currently available! Check it out at: https://choreganizer.netlify.com/

### *Easy shopping: Python • Javascript • Data Analysis*

A web application that help you get the best deal when purchasing Magic: The Gathering cards. Given a decklist as input, python scripts reference a number of distributors, build you an optimized cart, then take you straight to checkout! Check out my progress here: https://github.com/achubbic/StratusWalk.

### *StarCraft AI: pathfinding • algorithms*

Designed a pathfinding algorithm that would determine the most efficient path for a unit to take in a game of StarCraft 2. The algorithm accounts for the movements of surrounding units and adjusts its path accordingly. In situations where a group of units must walk through a tight corridor, it is an improvement to the pathfinding used by the game engine.

### Donald Who? • Machine learning • Arduino • C

Tired of politics? No problem! As TreeHacks contestants, my team and I built a Arduino module that replaces the voice of the celebrity of your choice with that of Kermit the Frog. A TensorFlow process scrapes news outlets for clips of the target politicians voice and uses the audio to train a neural network. An Arduino attached to the TVs sound card sends preprocessed audio to your local machine which compares incoming data to the target voice. If the voices match, the Arduino returns an overwrite code to the sound card, replacing the desired voice with everybody's favourite muppet!

### HTTP Server • Networks • C

Built a multithreaded HTTP server from scratch using only the Socket and File Manipulator libraries of C. The server is fully synchronized to prevent clients from overwriting the same memory at the same time. The server has 16 ports, but can emulate additional ports by putting client processes to sleep and then working on another clients request. Should this happen, the server handles requests and gives them priority based on which is least likely to cause deadlock.

### Trading card emulator • Encryption • Networks

Implemented a text-based replica of Magic the Gathering's first expansion in C. The client allows users to play over a network supported by the Photon platform. The network uses real-time RSA encryption to ensure that your nerds-of-friends cannot exploit the game to look at their opponent's hand via packet reading.